



Oregon

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Mr. Bob Wyatt
Northwest Natural
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**Subject: Preliminary Draft Offshore Groundwater Field Sampling Approach
Gasco/Siltronic Groundwater Source Evaluation
ECSI #84**

Dear Bob:

The Department of Environmental Quality (DEQ), the U.S. Environmental Protection Agency (EPA) and Portland Harbor Partners reviewed the October 2005 Preliminary Draft Offshore Groundwater Field Sampling Approach Gasco/Siltronic Groundwater Source Evaluation prepared by Anchor Environmental. DEQ requests that the work plan be revised to address the following review comments.

General Comments:

The report is not very easy to follow in that key elements have to be found in tables but they are not easily found in the text. This makes it hard to understand whether the individual interpretation of the tables and maps by the reviewers are the same that the authors meant for the report. Key items, such as the number of sampling locations, number of samples, depths, analyses, etc. should be clearly stated in both the text and tables.

The objectives of this work must be, at a minimum, the same objectives that are used for the rest of the deep core samples carried out by the LWG for the rest of Portland Harbor. That includes the depths, sample location criteria, and analyses. Overall the objective needs to be to characterize the sediments, contaminants, and ground water offshore of the GASCO and Wacker/Siltronic facility where characterization has not been done. This work must be able to be integrated into the LWG work being done along the rest of the Portland Harbor Site. One key element is that the objective of all or a selected subset of the borings needs to go to the basalt horizon to provide a full characterization of the ground water discharging in the alluvium. This is implied by the identified boring depths but should be clarified.

Overall the plan does not have the same level of sampling locations that were originally planned for the offshore work if done under the LWG effort. Additional borings and ground water sampling locations need to be added upstream and downstream of those presently proposed. In addition, there should be more deep sampling locations in some specific areas, such as outside of the tar body dredge area and outside and inside of the dock area.

Areas which are described in the text as “transects” should be shown as transects on the figures. As presented it is hard to find the proposed transects within a blur of other print on a map. Please add transects to the figures.

The workplan would benefit from some cross-sections along key locations with the existing data and proposed sampling depths and locations. However, DEQ is ok with deferring this data summary to the report. The data report should include sufficient cross-sections and figures that provide an understanding of the distribution of sediment and groundwater contaminants in-water and their relationship to upland sources. This summary should include the presentation of preexisting data.

An additional phase of groundwater investigation will likely be necessary to address data gaps that are apparent (e.g., nature and extent, and transition zone data) once the data from the subject work is available.

The distribution of this workplan via an electronic internet link did not work for some reviewers. Please provide 5 paper copies and 5 electronic copies on CD to DEQ for distribution of future work plans and reports related to the offshore characterization.

Specific Comments:

Section 1.1, Page 1 – Please remove the parentheticals (both instances) referring to 10 centimeters as the depth for transition zone water and the biologically active transition zone water. This has not been agreed upon.

Section 1.1, Page 2 – Establishing vertical groundwater gradients offshore is challenging, and it is not clear how data from this field effort will be used to design a monitoring program to characterize the offshore gradients. DEQ sees the need for discussions related to this objective to ensure that there is an agreement on the data necessary to achieve it.

Section 1.2.1.3, Page 4 – Cyanide should be added to the list of contaminants that are generally considered to be the primary contaminants of interest (COIs) at manufactured gas plant sites.

The list of COIs should be expanded to be consistent with the COI discussion for the Siltronic site.

Section 2.1.3, Page 9 – The second paragraph on page 9 notes that the joint source control strategy (JSCS) procedure requires a weight-of-evidence evaluation for those chemicals that exceed the JSCS screening level values (SLVs). DEQ only applies the weight-of-evidence evaluation for sites determined to be a medium priority for source control. DEQ initially evaluates upland sites to determine the priority for requiring additional evaluation or implementing upland source control measures. Sites are prioritized based on potential threats to

the Willamette River environment. High-priority sites are expected to move forward with aggressive source control with out delay. Medium priority sites are expected to perform a weight-of-evidence evaluation to determine if source control measures are required. DEQ and EPA consider the control of contaminated groundwater at the Gasco and Siltronic sites to be a high priority.

Section 2.1.4, Page 10 – Please provide, in the legend or notes section on the figures (Figures 3 through 8), the screening values used to calculate the “hazard quotients.”

Section 2.1.4, Page 11 and Figure 6 – The value for naphthalene noted at B 31 appears to be a typo. Please correct the figure. Is MW 01 in the text the same as MW 01 22 on the figures? Why is MW 01 22 not screened against human health values?

Section 2.1.4, Page 11 – The statement that the screening level for benzene is only exceed at one location, MW03 26, within the surficial water bearing zone is incorrect as there are several exceedances noted on Figure 6. This section of the plan should be corrected.

Section 3.2, Page 19 – Additional A, and B transect samples are necessary downstream of the proposed locations (i.e., GSC1, GSC2, GSC3 and GSC4 locations). Additional A and B transect samples are necessary upstream of the supplemental sample locations conducted by Maul Foster and Alongi for Siltronic (specifically at SLT5 plus 4 additional evenly spaced upstream transects adjacent to the Siltronic site. It is possible that additional transects further offshore will be necessary to define the nature and extent, and discharge zones of the groundwater plumes. NW Natural may want to consider a dynamic field plan where additional transects are added based on the quick analysis of initial samples. This worked well for the Siltronic field effort and limited the number investigation phases.

Section 3.2, Page 19 – Data from the September 15, 2005 Siltronic Supplemental Investigation Report is available. This data needs to be evaluated to determine if additional transects samples are necessary to meet the objectives of the study and to augment the data since only a limited numbed of the samples obtained by Siltronic were analyzed for an expanded chemical suite of MGP-related contaminants of interest (e.g., PAHs, cyanide and metals).

Section 3.2, Page 19 and Table 6 – The proposal to collect trident samples at depths of 10, 20 and 30 cm is a departure from the LWG approach approved by EPA. The rational for this sampling design is not presented in the work plan. During recent discussions with NW Natural regarding the monitoring plan for the pilot cap, Anchor staff raised concerns about the ability to obtain representative samples at similar intervals. DEQ’s preference is to follow the approach in the EPA approved LWG work plan which requires samples at 30 and 150 cm (with 90 cm when 150 cannot be completed). Piston core samples should be adjusted to match up with the Trident sample intervals. EPA/Partners also suggest that additional groundwater sampling between the lower Trident sample and the first 25 foot Geoprobe sample are warranted.

Table 7 – The analytical parameter list needs to be expanded to include:

- Complete volatile organic compound suite (EPA Method 8260)
- Metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury manganese, nickel, selenium, silver, thallium and zinc).
- Semivolatile organic compounds (EPA Method 8270) includes phenols
- Chlorinated herbicides and dioxin for samples collected from stations off of the Siltronic site (use methodology specified in the LWG Remedial Investigation Work Plan).

Section 3.2, Page 20 – DEQ understands that if matching pair data is not available that there may be some uncertainty in how the data relates to the conceptual site model. However, all data needs to be presented and discussed.

Section 4, Page 35 and Table 8 – This section needs to be consistent with the LWG Remedial Investigation Work Plan in both in the analytical methods used, the parameters reported and the appropriate detection limits. For example many of the detection limits identified are too high (e.g., arsenic, copper, lead and zinc) and need to be lowered.

Section 3.6.3.4, Page 28 – EPA recommends that EPA Method 5035A be used for the collection of sediment samples for volatile analysis. This method describes a closed-system purge-and-trap sample preparation process for the analysis of volatile organic compounds in solid materials (e.g., soils, sediments, and solid waste). While the method is designed for use on samples containing low levels of VOCs, procedures are also provided for collecting and preparing solid samples containing high concentrations of VOCs and for oily wastes. In addition, the method contains an appendix with pertinent information and appropriate references based on EPA's evaluation of currently available data and technology as applied to the most appropriate sample handling and preservation procedures in order to minimize the loss of VOCs during the collection and analysis of aqueous and solid materials, such as groundwater, wastewater, soils, solid waste, or sediments. These procedures are designed to minimize the losses of VOCs through the two most common mechanisms, volatilization and biodegradation. Here are the links to the method: <http://www.epa.gov/epaoswer/hazwaste/test/new-meth.htm>
SW 846 link-- <http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm>

Please call me at (503) 229-5538 if you have any questions and to discuss the schedule for the revised workplan and field work.

Sincerely,

Matt McClincy
Project Manager
Portland Harbor Section

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